DFI®

KS200/201/202

Touch Panel PC
User's Manual

A23200228

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FCC and DOC Statement on Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables must be used in order to comply with the emission limits.

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About this Manual

An electronic file of this manual is included in the CD. To view the user's manual in the CD, insert the CD into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear. Click "User's Manual" on the main menu.

Warranty

1. Warranty does not cover damages or failures that arised from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.

2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.

3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.

4. We will not be liable for any indirect, special, incidental or consequencial damages to the product that has been modified or altered.

Static Electricity Precautions

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.

2. Wear an antistatic wrist strap.

3. Do all preparation work on a static-free surface.

4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.

5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or con nectors by their ends.

Important:

Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

Safety Measures

To avoid damage to the system:
- Use the correct AC input voltage range.

To reduce the risk of electric shock:
- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

Battery:
- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

Safety Precautions

- Use the correct DC input voltage range.
- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.
- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.
- Keep this system away from humidity.
- Place the system on a stable surface. Dropping it or letting it fall may cause damage.
- The openings on the system are for air ventilation to protect the system from overheating. DO NOT COVER THE OPENINGS.
- Place the power cord in such a way that it will not be stepped on. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the system and that it matches the voltage and current marked on the system's electrical range label.
- If the system will not be used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
- If one of the following occurs, consult a service personnel:

  - The power cord or plug is damaged.

  - Liquid has penetrated the system.

  - The system has been exposed to moisture.

  - The system is not working properly.

  - The system dropped or is damaged.

  - The system has obvious signs of breakage.

- The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace the outlet.
- Disconnect the system from the DC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

About the Package

The package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

- 1 Touch Panel PC
- 1 Poron foam
- 3 Terminal blocks
- 1 19V Power adapter
- 1 CD disk includes: Manual
- 1 Quick Installation Guide

Optional Items

- Wall Mount kit
- Panel Mount kit
- Power Cord

The board and accessories in the package may not come similar to the information listed above. This may differ in accordance to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

Chapter 1 - Introduction

Overview

KS200

KS201

KS202

Key Features

- TI® AM3517 Sitara ARM Cortex-A8
- 7" WVGA Touch Screen Fanless Panel PC
- 512MB DDR2 onboard
- 512MB NAND Flash onboard

	KS200	KS201 4 Customizable function keys	KS202 Open Frame
SD/MMC	1 SD/MMC card socket		
LAN	1 COM port		
COM	2 COM ports		
USB	2 Type A USB 2.0/1.1 ports		
GPIO	12-bit GPIO connector		

Specifications

KS200

Processor System	• TI® AM3517 Sitara ARM Cortex-A8
Memory	• 512MB DDR2 onboard - 4 DDR2 64Mx16 RAM
LCD and Touch Screen	• 7" (800x480) WVGA TFT touch screen LCD • Supports touch screen - TI® TSC2004 touch screen controller • 400 NITS • 4-Wire Resistive type
Storage	• 1 SD/MMC card socket • 512MB NAND Flash - Samsung K9F4G08U0D flash memory 512Mx 8bit (512MB)
Ethernet	• LAN8710 10/100Mbps LAN chip • 1 LAN port • Supports 10BASE-T and 100BASE-T
Audio	• 1 Line-out
COM	• 1 RS232/422/485 COM port • 1 RS232 COM port
USB	• 1 TUSB1210 USB transceiver • 2 Type A USB 2.0/1.1 ports
GPIO	• 12-bit GPIO connector
Power	• Power input voltage - 14~30Vdc (+/-5%) input
Environment	• Temperature - Operating: -20°C ~ 65°C - Storage: -30°C ~ 80°C • Relative Humidity - 95% RH at 65°C, 1 week • Corrosion - 4 periods of 7 days at 65°C with 90-95% relative humidity after 2 hours salt spray or waiver

I/O Ports	• Front - 1 Power LED • Top - 1 SD/MMC card socket • Bottom - 12-bit GPIO (2 7-pole terminal blocks) - 1 Line-out - 1 DB-9 RS232 COM - 1 RJ45 10/100Mbps LAN with LEDs - 2 USB 2.0 (Type A) - 1 DB-9 RS232/422/485 COM - 1 DC-in (2-pole Phoenix terminal block) - 1 power switch
Front Panel Protection	• IP65 (Dust Tight; Water Proof protection)
Construction	• Aluminum front bezel, Rugged metal housing
Mounting	• Wall mount (VESA 75x75) • Panel mount (Mounting clamp)
Dimensions	• 235mm x 150mm x 40.8mm (W x H x D)
Weight	• 2.10 kg
OS Support	• Windows CE 6.0 • Linux 2.6.x
Certification	• CE • FCC Class B • Compliant with IEC 60945 (Protected B)

Specifications

KS201

Processor System	• TI® AM3517 Sitara ARM Cortex-A8
Memory	• 512MB DDR2 onboard - 4 DDR2 64Mx16 RAM
LCD and Touch Screen	• 7" (800x480) WVGA TFT touch screen LCD • Supports touch screen - TI® TSC2004 touch screen controller • 400 NITS • 4-Wire Resistive type
Storage	• 1 SD/MMC card socket • 512MB NAND Flash - Samsung K9F4G08U0D flash memory 512Mx 8bit (512MB)
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I/O Ports	• Front - 1 Power LED - 4 Function keys • Top - 1 SD/MMC card socket • Bottom - 12-bit GPIO (2 7-pole terminal blocks) - 1 Line-out - 1 DB-9 RS232 COM - 1 RJ45 10/100Mbps LAN with LEDs - 2 USB 2.0 (Type A) - 1 DB-9 RS232/422/485 COM - 1 DC-in (2-pole Phoenix terminal block) - 1 power switch
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Construction	• Aluminum front bezel, Rugged metal housing
Mounting	• Wall mount (VESA 75x75) • Panel mount (Mounting clamp)
Dimensions	• 235mm x 150mm x 40.8mm (W x H x D)
Weight	• 2.10 kg
OS Support	• Windows CE 6.0 • Android 2.1 • Linux 2.6.x
Certification	• CE • FCC Class B • Compliant with IEC 60945 (Protected B)

Specifications

KS202

Processor System	• TI® AM3517 Sitara ARM Cortex-A8
Memory	• 512MB DDR2 onboard - 4 DDR2 64Mx16 RAM
LCD and Touch Screen	• 7" (800x480) WVGA TFT touch screen LCD • Supports touch screen - TI® TSC2004 touch screen controller • 400 NITS • 4-Wire Resistive type
Storage	• 1 SD/MMC card socket • 512MB NAND Flash - Samsung K9F4G08U0D flash memory 512Mx 8bit (512MB)
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Front Panel Protection	• IP65 (Dust Tight; Water Proof protection)
Construction	• Aluminum front bezel, Rugged metal housing
Mounting	• VESA 75x75
Dimensions	• 230.40mm x 142.32mm x 35.8mm (W x H x D)
Weight	• 1.90 kg
OS Support	• Windows CE 6.0 • Android 2.1 • Linux 2.6.x
Certification	• CE • FCC Class B • Compliant with IEC 60945 (Protected B)

Getting to Know the KS200/201/202

Front View

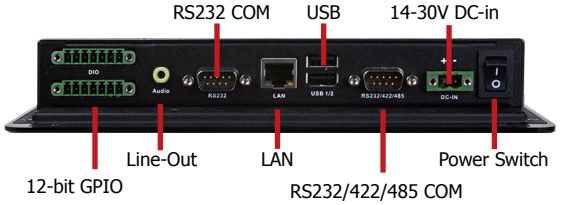
Power LED
Indicates the power status of the system.

Function Keys (KS201)
Used to navigate through the pages.

Top View

SD/MMC
Indicates to insert and SD and MMC.

Bottom View



COM Ports
Used to connect serial devices.

USB Ports
Used to connect USB 2.0/1.1 devices.

LAN Port
Used to connect the system to a local area network.

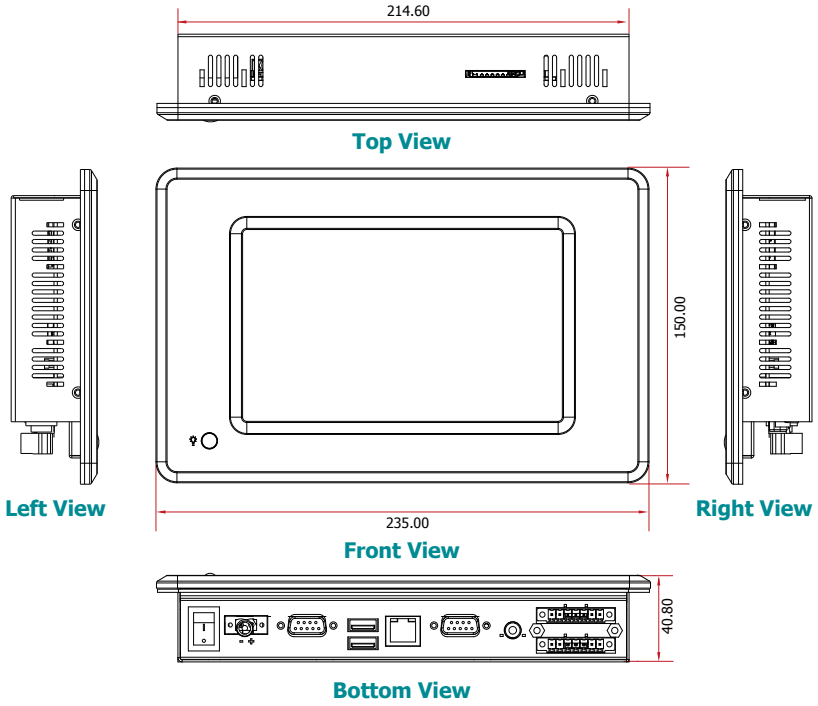
GPIO
Supports 12-bit digital output and input.

Line-out
Used to connect to a speaker.

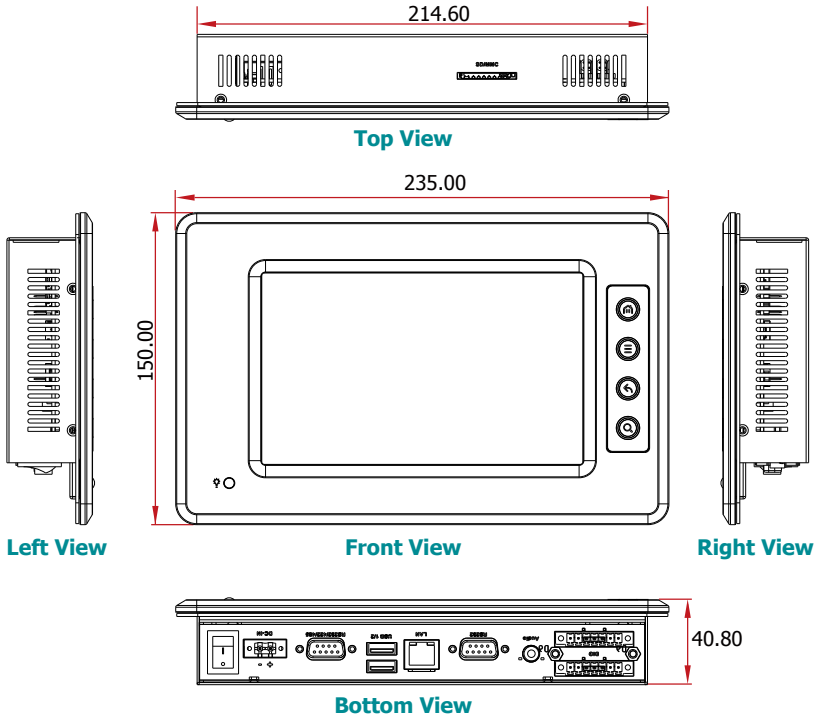
DC-in
Used to plug a power adapter.

Mechanical Dimensions

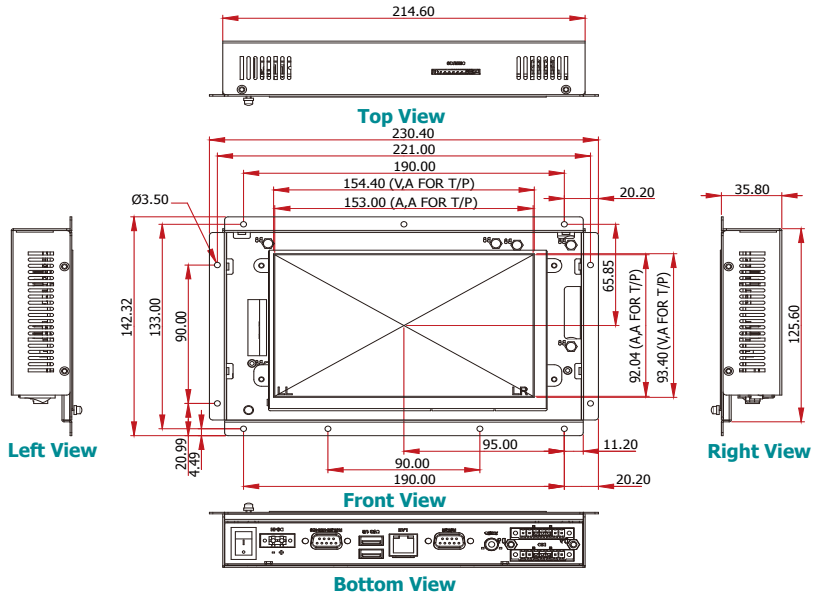
KS200



KS201



KS202


214.60
Top View
230.40
221.00
190.00
154.40 (V,A FOR T/P)
153.00 (A,A FOR T/P)
Ø3.50
20.20
35.80
142.32
133.00
90.00
65.85
92.04 (A,A FOR T/P)
93.40 (V,A FOR T/P)
125.60
20.99
4.49
95.00
11.20
90.00
190.00
20.20
Left View
Front View
Right View
Bottom View

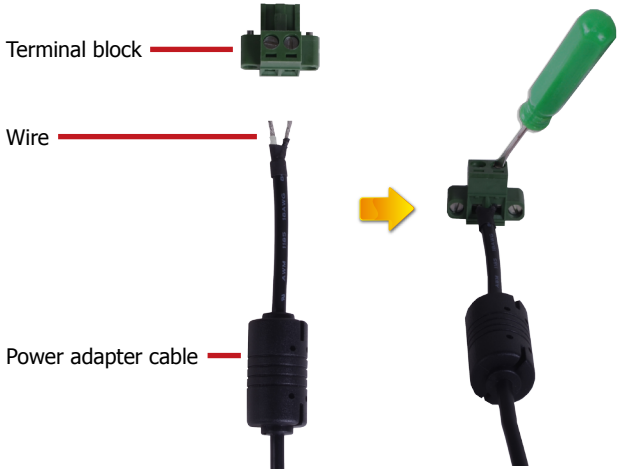
Chapter 2 - Installation

Connecting Cables to Terminal Blocks

Important:

When installing the touch panel PC, make sure the power is off. Failure to turn off, may cause severe damage to the system.

1. Insert the cable end of the power adaptor to the terminal block. To firmly fix the cable into the terminal block, use a screwdriver to clamp down the wires to the screw that is in the terminal block.



2. Plug the terminal block into the DC-in connector and then tighten the screws to secure the terminal block in place.

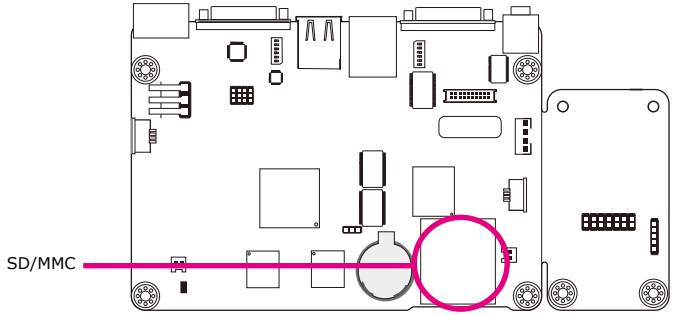
Chapter 3 - Ports and Connectors

Top Panel I/O Port

The front panel I/O port consist of the following:

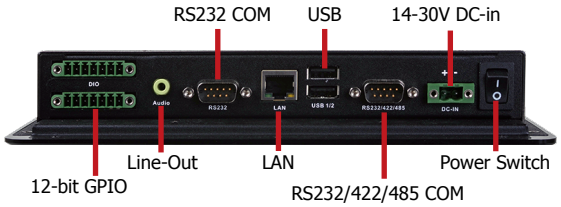
- 1 SD/MMC slot

SD/MMC



This expansion port is used to insert a Secure Digital (SD) or Multimedia Card (MMC) device. Aside from storing data files, an SD card is also capable of storing powerful software applications.

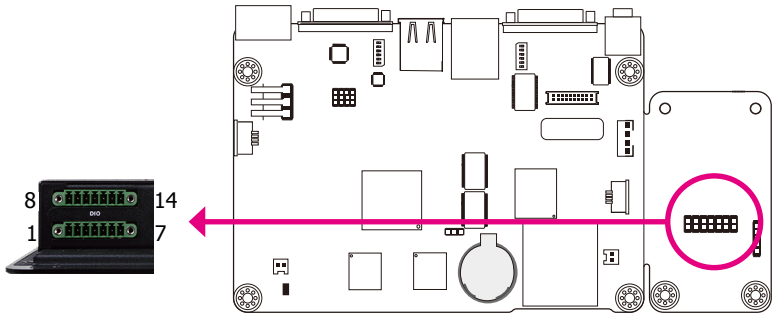
Bottom Panel I/O Ports



The bottom panel I/O ports consist of the following:

- 1 12-bit GPIO
- 1 Line-Out jack
- 1 RS232 COM port
- 1 RS232/422/485 COM port
- 1 LAN port
- 2 USB ports

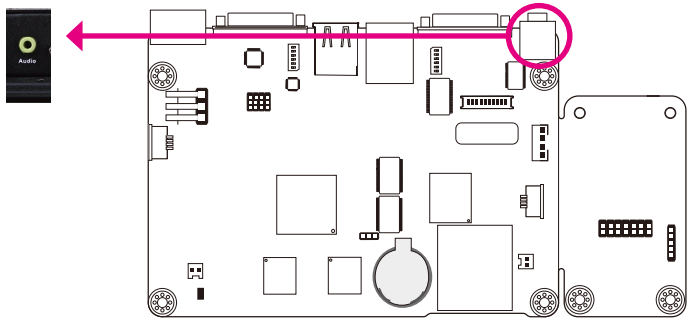
GPIO



The Digital I/O connector provides powering-on function to an external device that is connected to this connector.

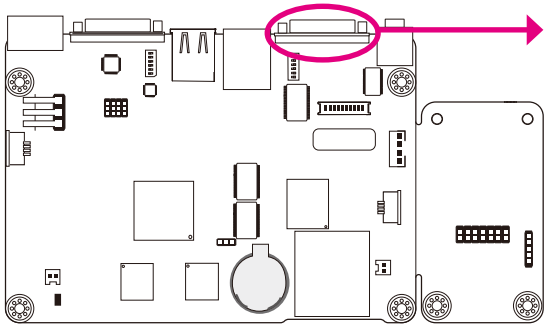
Pin	Pin Assignment	Pin	Pin Assignment
1	GPIO-OUT1	8	GPIO-IN1
2	GPIO-OUT2	9	GPIO-IN2
3	GPIO-OUT3	10	GPIO-IN3
4	GPIO-OUT4	11	GPIO-IN4
5	GPIO-OUT5	12	GPIO-IN5
6	GPIO-OUT6	13	GPIO-IN6
7	5V_VCC	14	GND

Line-out



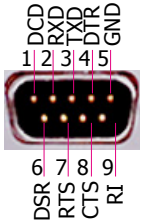
This jack is used to connect a headphone or external speakers.

RS232 COM 1

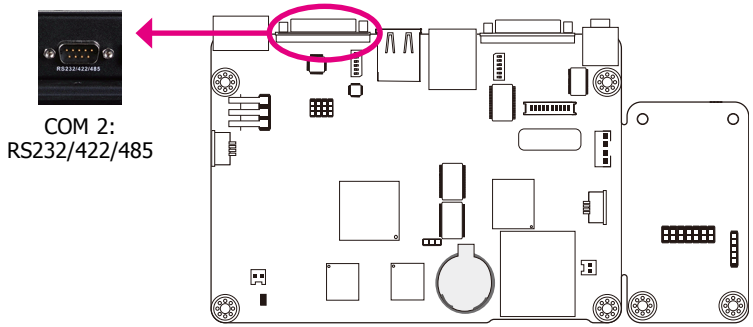


COM 1: RS232

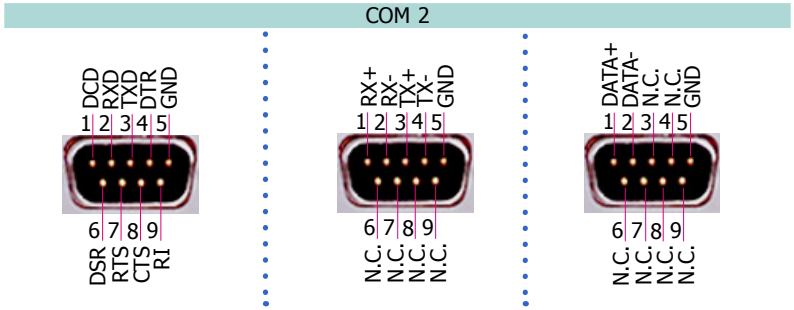
COM 1 is fixed at RS232.



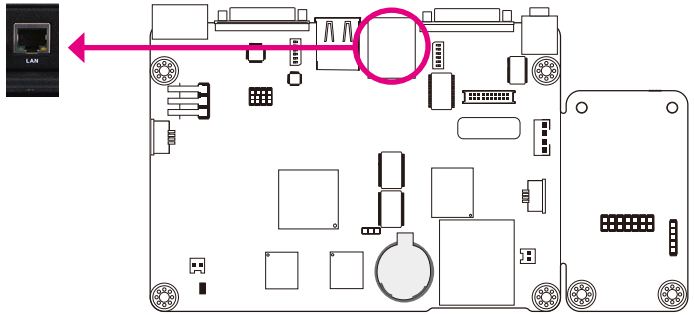
RS232/422/485 COM 2



COM 2:
RS232/422/485

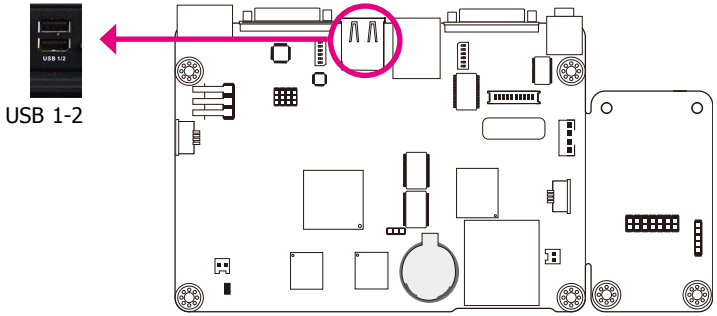


LAN Port



The LAN port allows the system board to connect to a local area network by means of a network hub.

USB Ports



USB allows data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals.

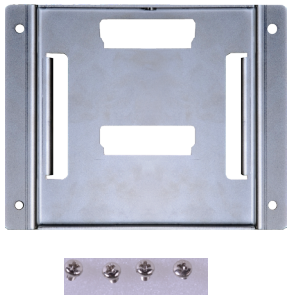
The system board is equipped with two onboard USB 2.0/1.1 ports (USB 1-2).

Chapter 4 - Mounting Options

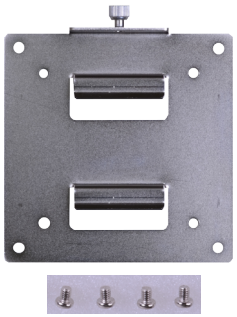
Wall Mount

The wall mount kit includes the following:

- 2 Wall mount brackets
- Bracket screws

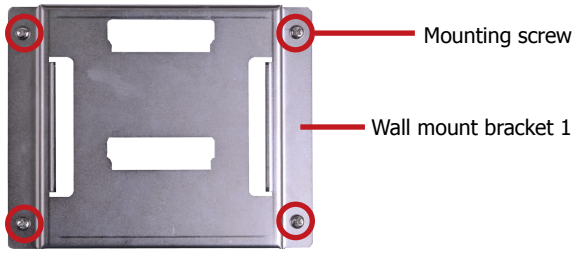


Wall mount bracket 1

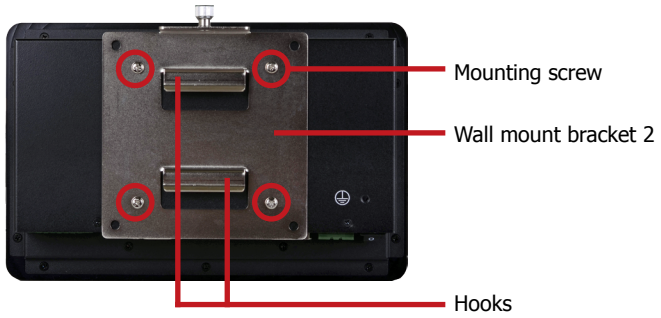


Wall mount bracket 2

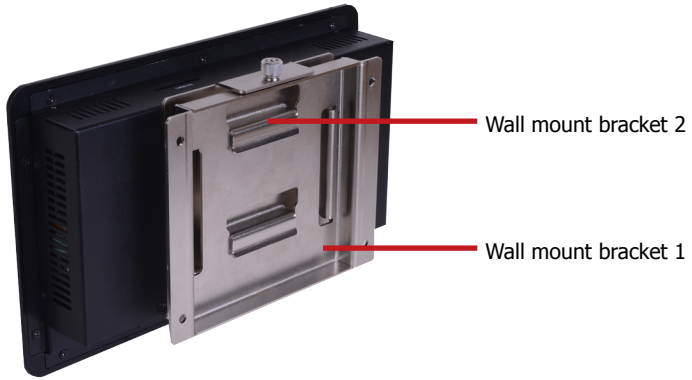
1. Select a place on the wall where you will mount the Panel PC.
2. Use the provided mounting screws to attach "wall mount bracket 1" to the wall.



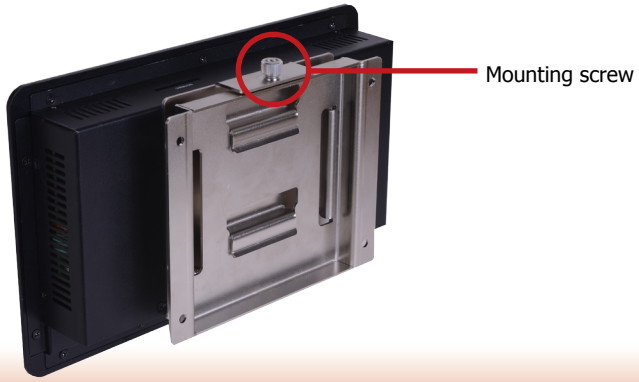
3. Attach the other bracket (wall mount bracket 2) to the rear of the Panel PC.

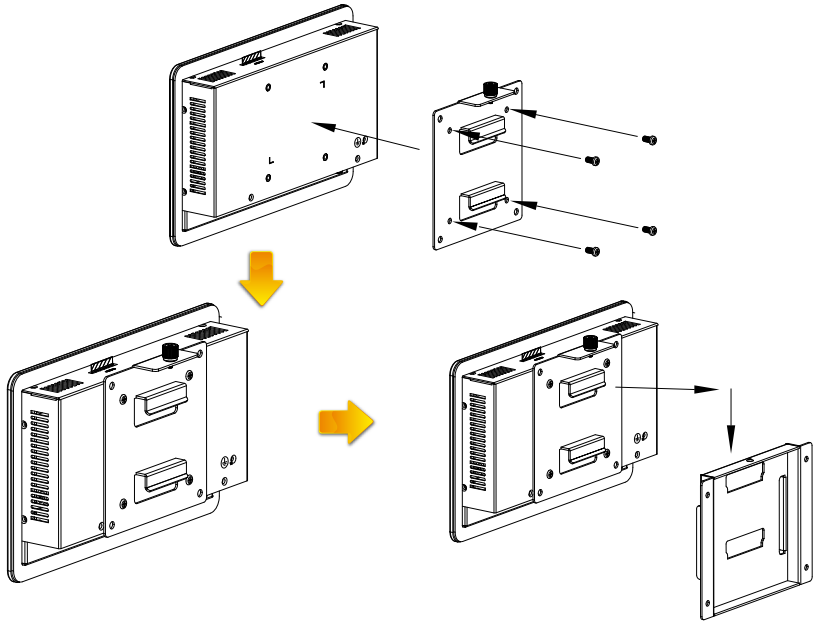


4. Using the hooks on "bracket 2", slide the Panel PC to "bracket 1".



5. Tighten the screw to hold the assembly in place.

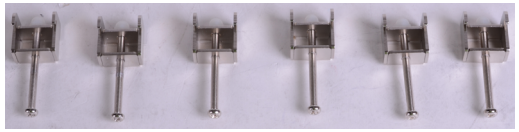




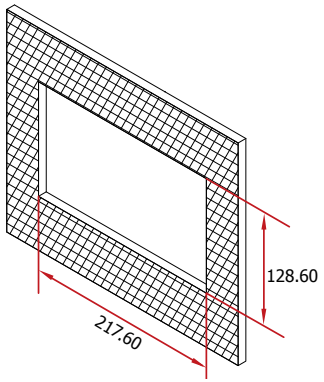
Panel Mount

The panel mounting kit includes the following:

- 6 mounting clamps



1. Select a place on the panel where you will mount the Panel PC.
2. Cut out a shape on the panel that corresponds to the Panel PC's rear dimensions (217.6mm x 128.6mm).



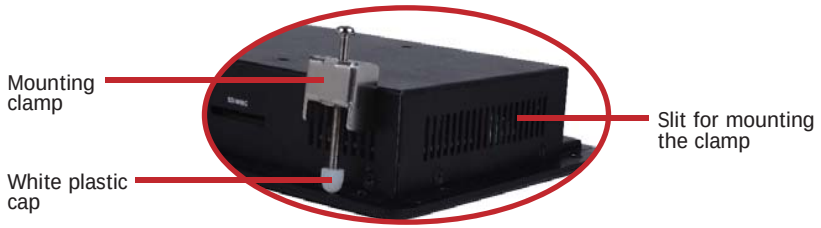
3. Stick the poron foam on the rear panel.

Poron foam

Poron foam

4. Slide the Panel PC through the hole until it is properly fitted against the panel.

5. Position the mounting clamps along the rear edges of the Panel PC, fitting them into the slits that are around the Panel PC.



6. The first and second clamps must be positioned and secured diagonally prior to mounting the rest of the clamps. Tighten the clamp's screw using an electric screwdriver until the white plastic cap touches the panel. Do not over tighten the screws to prevent damaging the Panel PC. The illustration below shows all clamps properly mounted.